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EXAMINER	
WHITEMAN, BRIAN A	

ART UNIT	PAPER NUMBER
1635	24

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/380,546	Applicant(s) WALLACH ET AL.	
	Examiner Brian Whiteman	Art Unit 1635	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____ .

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *44-61 and 63-68* is/are pending in the application.

4a) Of the above claim(s) *60 and 61* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *44-59 and 63-68* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *29 November 1999* is/are: a)☐ accepted or b)☒ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) *22* .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

Final Rejection

Claims 44-59 and 63-68 are pending examination.

Applicants' traversal, amendment to claims 44, 53-54, 57, 60-61, the deletion of claim 62, the addition of claims 45-52, 55-56, and 58-59 in paper no. 23 is acknowledged and considered.

Response to applicants' traversal of election requirement

Applicants traverse the restriction stating, "Claim 16, as originally presented, was drawn to the method of use, and the first methods disclosed in that claim was a method of protein therapy. Thus, the first listed claimed process is a process of protein therapy. The fact that the method of use was mentioned in Group I of the restriction requirement is irrelevant as the examiner agreed with applicants that Groups I and II should have been combined. If the had been combined in the first place, then the first presented method of use for the DNA/peptide therapy product would have been the method of protein therapy (see paper no. 23, page 6)

The applicants' traversal is acknowledged and is not found persuasive because PCT guideline, 37 CFR 1.475(d), states:

"If multiple products, processes of manufacture or uses are claimed, the first invention of the category first mentioned in the claims of the application and the first recited invention of each other categories related thereto will be considered as the main invention in the claims, see PCT Article 17(3)(a) and 1.476(c)."

In view of the guideline, the first product set forth in the originally filed claims was directed to a **DNA sequence** encoding a protein, thus the first product is a **DNA sequence** and the first method would be a method of **DNA therapy** and not a method of protein therapy as asserted by the applicants. Therefore, claims directed to protein therapy are considered non-elected because they are directed to a second method of using a claimed product (protein) not listed in the first claim.

Claims 60-61(encompassing polypeptide therapy) are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention, there being no allowable generic or linking claim. Election was made with traverse in Paper No. 13.

Drawings

NOTE: In the next response, please submit a response to the PTO 498 because a PTO 498 was filed with the non-final rejection paper no. 10 and the applicants have not submitted proposed corrections to the drawings. If the reply to the Final Rejection does not have a response to the 498, the response will be considered non-responsive. See 37 CFR 1.85(a).

Claim Objections

Claims 45-48, 55-56, 58, 63-65, and 67-68 are objected to as being dependent upon a rejected base claim (claims 44, 54, or 66), but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 44(c), 49-53, 54(c), 57, and 59 remain rejected under 35 U.S.C. 112, first paragraph, because the specification, while being enabling for 1) A DNA sequence comprising either SEQ ID NO: 1 or 3 and fragment thereof; or comprising the amino acid set forth in either SEQ ID NO: 2 or 4, which sequences are capable of binding to either MORT-1 and/or MACH proteins; 2) A vector comprising the DNA of 1; 3) A host cell containing the vector of 2; 4) A method for producing a polypeptide set forth in either SEQ ID NO: 2 or 4; 5) A polypeptide sequence which is capable of binding to either MORT-1 and/or MACH proteins, wherein said sequence comprises the amino acid sequence of SEQ ID NO: 2 or 4, and does not reasonably provide enablement for the rest of the disclosed embodiment. The as-filed specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention commensurate in scope with these claims.

Factors to be considered in determining whether a disclosure would require undue experimentation have been summarized in In re Wands, 858 F.2d 731, 8USPQ2d 1400 (Fed. Cir. 1988). They include (1) the quantity of experimentation necessary, (2) the amount of direction or guidance presented, (3) the presence or absence of working examples, (4) the nature of the invention, (5) the state of the prior art, (6) the relative skill of those in the art, (7) the predictability or unpredictability of the art, and (8) the breadth of the claims.

For clarification purposes G1α is also known as CASHα and G1β is also known as CASHβ.

The disclosure claims a molecule comprising a DNA sequence encoding a polypeptide and/or a polypeptide which is capable of binding to one or more of MORT-1 and MACH proteins, which polypeptide has the amino acid sequence of a fragment of a G1 protein isoform whose sequence is that of SEQ ID NO: 2 (CASHα) or 4 (CASHβ); an analog or a derivative of a G1 protein isoform whose sequence is that of SEQ ID NO: 2 or 4, which differs from the SEQ ID NO: 2 or 4 by no more than then substitutions, deletions, and/or insertions of amino acid residues and is capable of binding to one or more of MORT-1 and MACH proteins. In view of the state of the art and the as-filed specification, it is not apparent to one skilled in the art if any analog or derivative of a G1 protein with a nucleic acid encoding the polypeptide set forth in SEQ ID NO: 2 or 4, would possess the same biological activity compared to the polypeptide set forth in SEQ ID NO: 2 or 4. Since, the relationship between a sequence of a peptide and its tertiary structure (i.e. its activity) is not well understood and is not predictable (e.g. see Chiu et al., *Folding and Design*, 1998, pp. 23-228), it would required undue experimentation for one skilled in the art to arrive at other peptides that have either CASHβ or CASHβ activity. In addition, in *Amgen Inc. v. Chugai Pharmaceutical Co. Ltd.,* 18 USPQ2d 1016 (Fed. Cir. 1991), the court ruled that a claim to a large genus of possible genetic sequences encoding a protein with a particular function that needs to be determined subsequent to the construction of the genetic sequences may not find sufficient support under 35 U.S.C. 112, first paragraph, if only a few of the sequences that meet the functional limitations of the claim are disclosed and if undue experimentation would be required of one skilled in the art for the determination of other genetic sequences that are embraced by the claim. This is the case here. In other words, since it would require undue experimentation to identify other peptides that have CASH activity, it certainty

would require undue experimentation to make their corresponding DNA and, therefore any other nucleotide sequence other than the sequence encoded by either SEQ ID NO: 1 or 3 or the DNA encoding either the polypeptide set forth in SEQ ID NO: 2 or 4, is not enabled by the specification.

Furthermore with respect to claims 44 and 54, 57 and claims dependent therefrom encompassing either a DNA sequence encoding a polypeptide or a polypeptide which is capable of binding to one or more of MORT-1 and MACH and affects the intracellular signaling process initiated by the binding of FAS ligand to FAS-R or the binding of TNF to p55-R, the specification is not enabled for either a DNA sequence (SEQ ID NO; 1 and 3) encoding a polypeptide or a polypeptide (SEQ ID NO: 2 and 4) which is capable of binding to Mch4 and that affect the intracellular signaling process. Goltsev et al., The Journal of Biological Chemistry, Vol. 272. 1997, pages 19643-19644 (Applicants' IDS), display that in a two-hybrid testing of the interactive properties of CASHα and CASHβ reveal that both variants interact with MORT1/FADD and CASP-8 (MACH).

In addition, the as-filed specification examined CASHα in either HeLa cells (a cancer cell line) or 293 cells (an immortalized human cell line) and its effect on p55R or a chimeric receptor comprised of p55R and FAS R by over-expressing CASHα (page 96). Expression of the CASHα affected the two cell lines very differently (page 96). In the 293 cells, expression resulted in marked cytotoxicity. In HeLa cells it inhibited cytotoxicity of p55-R and FAS-R. Also, the as-filed specification states, "The G1 proteins (CASHαor CASHβ) and its isoforms are suspected to be expressed in different tissues at markedly different levels and apparently with different patterns of isotypes as indicated in co-owned co-pending pending applications (page

56). In addition, with respect to experiments over-expressing CASHα, Goltsev states, "part of the effects observed when expressing a protein in amounts far higher than its normal level will turn out to be unrelated to its real function (page 19644)." In view of the unpredictability of the two novel proteins and the lack of sufficient guidance provided by the specification for displaying the biological function of each novel protein since over-expressing a protein usually results in an unrelated function and the specification has not provided sufficient guidance to circumvent this area of concern expressed by Goltsev, it would require an undue amount of experimentation to determine how either CASHα or CASHβ would sufficiently affect any intracellularly pathway. Furthermore, in view of the varied expression of CASHα in two different cell lines, it would take one skilled in the art an undue amount of experimentation to reasonably correlate the biological effect of CASHα expression when CASHα is transfected into a cell because the expression of CASHα could result in cytotoxicity or inhibition of cytotoxicity. Also, in view of the In re Wands Factors, listed above, the specification lacks sufficient description for the unpredictability of the biological activity of CASHβ because the specification fails to provide a representative number of cell lines (e.g. non-cancerous or non-immortalized cell line) that display the same function of CASHβ when transfected into HeLa or 293 cells, which are abnormal cell lines.

In conclusion, the as-filed specification and claims coupled with the state of the art at the time the invention was made only provide sufficient guidance and/or evidence to reasonably enable the claimed invention 1-5 listed above. Given that gene therapy wherein any carrier is employed to correct a disease or a medical condition in any mammal was unpredictable at the time the invention was made, and given the lack of sufficient guidance as to a gene therapy effect

produced by any of the gene delivery vectors cited in the claims, one skilled in the art would have to engage in a large quantity of experimentation in order to practice the claimed invention based on the applicant's disclosure and the unpredictability of gene therapy. In addition, the lack of guidance for making and/or using any amino acid contemplated by the claims does not reasonably extrapolate to the full scope of the claimed invention encompassing any unknown DNA molecule encoding a mutated polypeptide of SEQ ID NOs: 2 and 4 or the amino acid sequences set forth in SEQ ID NOs: 2 and 4. Furthermore, the disclosure does not provide sufficient guidance in view of Chiu et al., *Folding and Design*, 1998, pp. 23-228 and *Amgen Inc. v. Chugai Pharmaceutical Co. Ltd.,* 18 USPQ2d 1016 (Fed. Cir. 1991) for making and/or using unknown DNA sequences encoding an analog or derivative of the polypeptide set forth in SEQ ID NOs: 2 or 4.

Applicants traverse the rejection under 112 enablement for the following reasons: the amendment to claim 44 and 54 clarify the language of the about the ten amino acid changes; ten changes in the amino acid sequence of SEQ ID NO: 2 (480 residues) amount to only 2% and 10 our 221 is still about 95% for SEQ ID NO: 4; the examiner's attention is invited to the revised written description guideline training materials (Example 14); it should be noted that all sequences require the fragment have the ability to bind MORT-1 and/or MACH; a view of the prior patents will show that it is common for those of ordinary skill in the art to take part in this degree of experimentation as there are hundreds of patents that include claims with novel proteins and analogs thereof with 95% or even less identity; the level of ordinary skill was very high; When changing the sequence by less than 5%, there would be an expectation that the

function is maintained (See pages 33, line 14- page 36, line 19 of the specification). See pages 7-17.

Applicants' traversal is acknowledged and is found partially persuasive for 1-5 listed above.

However, the traversal is not found persuasive for the full scope of the claimed invention for the following reasons: the as-filed specification and/or the applicants' traversal fail to provide sufficient and/or factual evidence to reasonably correlate from making and/or using a DNA sequence encoding G1 protein isoform SEQ ID NOs: 2 or 4 to making and/or using an analog of any of the isoforms because of the art of record teaching the unpredictability of predicting a protein's tertiary structure from is primary sequence (Ngo et al. and Chui et al.); the applicant's journal article displaying the unpredictability of the biological activity of SEQ ID NOs: 2 and 4; and the lack of guidance for what amino acids of either SEQ ID NO: 2 or 4 are considered essential for binding to either MORT-1 and/or MACH. In addition, in *Amgen Inc. v. Chugai Pharmaceutical Co. Ltd.*, 18 USPQ2d 1016 (Fed. Cir. 1991), the court ruled that a claim to a large genus of possible genetic sequences encoding a protein with a particular function that needs to be determined subsequent to the construction of the genetic sequences may not find sufficient support under 35 U.S.C. 112, first paragraph, if only a few of the sequences that meet the functional limitations of the claim are disclosed and if undue experimentation would be required of one skilled in the art for the determination of other genetic sequences that are embraced by the claim. This is the case here. In other words, since it would require undue experimentation to identify other peptides that have CASH activity, it certainty would require undue experimentation to make their corresponding DNA and, therefore any other nucleotide sequence

other than the sequence encoded by either SEQ ID NO: 2 or 4 is not enabled by the as-filed specification.

Furthermore, the traversal for written description is moot because the examiner did not reject any claims under written description and in view of Vas-Cath Inc. v. Mahurkar, 935 F.2d 1555, 1562, 19 USPQ2d 1111, 1115 (Fed. Cir. 1991), which emphasized that the written description and enablement requirements of 112 first paragraph, are two separate and distinct requirements that must each be met and which by direct inference, cannot form a basis for each other with regard to rejections of the claims (See MPEP 2161).

Furthermore, with respect to the traversal encompassing that the level of predictability in the art was high and the amount of direction provided by the invention on pages 33, line 14-page 36, line 19 is sufficient for one skilled in the art to make and/or use the full scope of the claimed invention. The traversal is not found persuasive because it is apparent from the state of the prior art exemplified by Ngo *et al.* (The Protein Folding Problem and Tertiary Structure Prediction, Birkhauser Boston, 1994, pp. 491-494) and Chiu *et al.* that the description of the primary sequence of amino acid residues in which the positions of the amino acid residues are particularly arranged is essential for the biological function of the protein encoded by the sequence. This essential element that is required for a sufficient guidance of a representative number of species as embraced by the claimed genus of analogs of G1 protein isoforms.

In addition, with respect to experiments in the specification for over-expressing CASHα, Goltsev states, "**part of the effects observed when expressing a protein in amounts far higher than its normal level will turn out to be unrelated to its real function** (IDS, The Journal of Biological Chemistry, Vol. 272. 1997, pages 19643-19644)." In view of the

unpredictability of the two novel proteins and the lack of sufficient guidance provided by the specification for displaying the biological function of each novel protein since over-expressing a protein usually results in an unrelated function and the specification has not provided sufficient guidance to circumvent this area of concern expressed by Goltsev et al., it would require an undue amount of experimentation to determine what analogs have the ability to bind MORT-1 and/or MACH and have the same function as SEQ ID NO: 2 or 4. Furthermore, one skilled in the art understands that proteins are composed of more than one subunit and proteins that are composed of more than one subunit are found in many different classes of proteins (Phizicky et al. Microbiological Reviews, Vol. 59, pp. 94-123,1995). In view of the different subunits of a protein, a subunit from a protein that binds to SEQ ID NO: 2 or 4 in a binding assay could be from a distinct class of proteins that has a completely distinct function compared to the G1 proteins of the claimed invention. Therefore, a mere statement asserting that the assays involved to determine whether any such analog has the ability to bind MORT-1 and/or MACH are routine and all claimed analogs must possess the specified activity of being able to bind MORT and/or MACH (page 15) without providing the essential and specific arrangement of the amino acid residues positioned in the sequence does not lend evidentiary support for a skilled artisan to have recognized that applicants sufficiently described a representative number of nucleotide sequences to sufficiently represent the genus of analogs of G1 protein isoforms as claimed, particularly since the essential element of the coding sequence of a generic G1 is lacking from the as-filed specification and since the skill and knowledge in the art is not adequate or conventional to determine the primary sequence of the representative number of species of G1 encoded genes or

nucleic acids on the basis of the only disclosure of protein isoforms in either SEQ ID NOs: 2 or 4.

Therefore, the rejection under 112 first paragraph, for claims 44(c), 49-53, 54(c), 57, and 59 remain.

Applicants traverse the rejections under 112 second for the following reasons: Examiner's attention is invited to MPEP 608.01(n) showing examples of acceptable dependent claim wording; Examiner' attention is invited to MPEP 2173.02; Applicants submit that with respect that valuable examining time and valuable attorney time should not be wasted on such minor insignificancies. See pages 17-18.

Applicants' traversal is acknowledged and is found partially persuasive and the rejection under 112 second for claims 45-48 and 55-58 is withdrawn. However, the applicants did not overcome the rejection for claims 49-52 and 59 for the reasons set forth below. Furthermore, the addition of new claims requires a new rejection under 112 second.

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter, which the applicant regards as his invention.

Claims 49-52 and 59 remain and claim 66 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The statement in claim 49, "**A** molecule in accordance with claim 44" is indefinite because it does not point out which molecule **a molecule** in accordance with claim 44 is referring to in the claim. The dependent claims should state "The molecule in accordance with claim 44".

The statement in claims 50-52 and 66, "**A** vector comprising a molecule in accordance with claim 44 (65)" is indefinite because it does not point out which molecule **a vector in accordance with claim 49(65)** is referring to in the claim. The dependent claims should state "The **vector in accordance** with claim 49(65)".

The statement in claim 59, "**A** polypeptide in accordance with claim 54" is indefinite because it does not point out which polypeptide **a polypeptide in accordance with claim 54** is referring to in the claim. The dependent claim should state "The polypeptide in accordance with claim 54".

Applicants traverse the rejections under 112 second for the following reasons: Examiner's attention is invited to MPEP 608.01(n) showing examples of acceptable dependent claim wording; Examiner' attention is invited to MPEP 2173.02; Applicants submit that with respect that valuable examining time and valuable attorney time should not be wasted on such minor insignificancies. See pages 17-18.

Applicants' traversal is acknowledged and is not found persuasive for the following reasons: The claims are not **multiple dependent claims** as set forth in MPEP 608.01(n). More specifically, each claim (claim 44, 49, or 54) has the preamble "A molecule"; "A vector"; or "A polypeptide". There are several products listed in each claim, therefore, it is not apparent to one skilled in the art, which molecule, vector, or polypeptide the dependent claims are claiming. For example, claim 49 states "A vector", which refers to one vector and claims 50-52 (depends on 49) state, "A vector in accordance with claim 49", which refers that the claim encompasses more than one vector. Suggest amending the word 'A" to the "The" in the claims.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

Claims 44(b,c), 49, 50, 51, 52, 53, 54(b,c), and 57 are rejected under 35 U.S.C. 102(e) as being anticipated by Shu et al. (US Patent NO. 6,242,569, file date 2/5/97). Shu claims an isolated Casper protein comprising SEQ ID NO: 2 or a fragment thereof comprising SEQ ID NO: 2, residues 1-96, 1-202, 1-435, 78-480, 192-435, 192-480, 390-480 or residue, 360 joined directly to at least 6 residues of SEQ ID NO: 2 flanking residue 360, wherein said protein specifically binds at least one of a FADD, TRAF1, TRAF2, Caspase-3, or Caspase-8 protein (column 19, claim 2). The DNA sequence encoding the amino acid sequence claimed by Shu is 99.8% identical to the applicants' claimed DNA sequence encoding SEQ ID NO: 2 and 99.8% identical to the applicants' claimed DNA sequence encoding SEQ ID NO: 4. In addition, the amino acid sequence claimed by Shu is 99.8% identical to applicants' SEQ ID NO: 2. Also, the amino acid claimed by Shu is 91% identical to applicants' amino acid SEQ ID NO: 4, but has 12 different amino acids and does not read on claim 44c or claim 54c, however, the amino acid claimed by Sul reads on claims 44b and 54b. In addition, the DNA sequence claimed by Shu is 87% identical to applicants' SEQ ID NO: 1 and 74.7% identical to SEQ ID NO: 3. Furthermore, the Caspase-8 protein is also known as the MACH protein. Shu also teaches that the proteins

may be produced recombinantly from transformed host cells (abstract, column 3, lines 44-56, and column 4, lines 50-67).

Applicants traverse the rejection under 102(e) for the following reasons: First, it is not clear where in Shu there is disclosed any sequence 100% identical to present SEQ ID NO: 4 because the C-terminal part of SEQ ID NO: 4 differs from anything disclosed in Shu; The examiner is requested to elucidate this point; Second, as the examiner notes Shu claims the same invention as being claimed by the present application and the applicants cannot swear back of Shu with a declaration under 37 CFR 1.131; In order to antedate Shu an interference proceeding must be initiated. See pages 18-20.

Applicants' traversal is acknowledged and is found partially persuasive for the following reasons: a search for a nucleic acid sequence encoding applicants' SEQ ID NO: 2 in the prior art displays that a sequence taught by Shu et al. (US Patent No. 6242569) is 99.792 % similar to a nucleic acid encoding SEQ ID NO: 2 (A copy of the sequence search is enclosed). The examiner apologizes because in an oversight the examiner rounded the number (99.792) to the nearest whole number, which was 100%. Therefore, the rejection under 102(e) for claim 44a is moot in view of the applicants' traversal.

However, the applicants' traversal is not found persuasive for the claim 44(b) and (c) because the sequence taught by Shu anticipates the sequence set forth in the subsection of the claim. In addition, applicants have not provided sufficient guidance to overcome the rejection for claims 49-53, and 54(b,c) because of the reasons set forth above. In addition, the applicants' traversal is not found persuasive because the applicants have not overcome the rejection under 102(e), applicants attention is invited to MPEP 706.02(b). In view of the requirements set forth

under 706.02(b), the applicants have not submitted any documentation under this section to overcome the rejection.

Therefore, claims 44(b,c), 49-53, 54(b,c), 57 are anticipated by Shu et al under 102(e).

The applicants request for interference under 37 CFR 1.607 in paper no. 20 is not considered because the applicants have not overcome the rejections set forth under 102(e), see MPEP 706.02(b).

In addition, MPEP 2307.02 states: The examiner should not proceed to propose an interference where the examiner is aware of a reference or other ground of unpatentability for the application claims which correspond to the patent claims, even if the ground of unpatentability would also be applicable to the patent claims. Although an applicant may wish to have his or her application placed in interference with a patent in order to raise a ground of unpatentability against the patent claims, an interference will not be proposed unless at least one of the claims in the application corresponding to the claims of the patent is allowable.

In view of MPEP 2307.02, the interference is not considered because the claims in which the applicants wish to place in interference are rejected under 102(e) and the rejection for any of these claims have not been overcome by the applicants.

Furthermore, claims 44, 54, 57 of this application are asserted by applicant to correspond to claim(s) 1-8 of U.S. Patent No. 6,242,569.

The examiner does not consider these claims to be directed to the same invention as that of U.S. Patent No. 6,242,569 because the instant application is directed to a genus of nucleic acid

sequences and the sequences described in the claims of '569 are species of the genus claimed in the instant application. Thus, the sequences in '569 are considered to be species of the DNA sequences claimed in the instant application and a genus cannot anticipate a species. See MPEP 2131.02. Accordingly, an interference cannot be initiated based upon these claims.

In addition, MPEP 2308.01 states, "When an applicant attempts to provoke an interference with a patent, the examiner must determine the effective filing dates of the application and of the patent; only the patent's effective United States filing date will be considered. Any claim of foreign priority by the patentee under 35 U.S.C. 119(a) will not be taken into account when determining whether or not an interference should be declared, in order to be consistent with the holding in In re Hilmer, 359 F.2d 859, 149 USPQ 480 (CCPA 1966), that the effective date of a United States patent as a reference is not affected by the foreign filing date to which the patentee is entitled under 35 U.S.C. 119(a). If the patentee is determined to be entitled to the benefit of a prior United States application as to claimed subject matter involved in the interference, that application must be listed on the PTO-850 form (see MPEP§2309.02)".

"If the effective filing date of the application is more than 3 months after the effective filing date of the patent, 37 CFR 1.608(b) requires that the applicant must file (A) evidence, such as patents, publications and other documents, and one or more affidavits or declaration, which demonstrate that applicant is prima facie entitled to a judgment relative to the patentee, and (B) an explanation stating the particularity basis upon which the applicant is prima facie entitled to the judgment."

In view of the MPEP 2308.01, the applicants have not submitted the documents required when the effective filing date of the application is more than 3 months after the effective filing date of the patent, 37 CFR 1.608(b).

Therefore, in view of the above rejections and statements cited from the MPEP; the interference will not be considered.

No claims are allowed.

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL.** See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kay Pinkney whose telephone number is (703) 305-3553.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Brian Whiteman whose telephone number is (703) 305-0775.

The examiner can normally be reached on Monday through Friday from 7:00 to 4:00 (Eastern Standard Time), with alternating Fridays off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's mentor, primary examiner, Dave Nguyen can be reached at (703) 305-2024.

If attempts to reach the primary examiner by telephone are unsuccessful, the examiner's supervisor, John L. LeGuyader, SPE - Art Unit 1635, can be reached at (703) 308-0447.

Papers related to this application may be submitted to Group 1600 by facsimile transmission. Papers should be faxed to Group 1600 via the PTO Fax Center located in Crystal Mall 1. The faxing of such papers must conform with the notice published in the Official Gazette, 1096 OG 30 (November 15, 1989). The CM1 Fax Center number is (703) 308-4556.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0196.

Brian Whiteman
Patent Examiner, Group 1635
7/24/02

DAVE T. NGUYEN
PRIMARY EXAMINER